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Indian Standard
SPECIFICATION FOR TARRED HEMP MARLINE, TWO-PLY
(First Revision)

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INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

September 1972

Indian Standard
SPECIFICATION FOR TARRED HEMP MARLINE, TWO-PLY
(First Revision)

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Indian Standard
SPECIFICATION FOR TARRED HEMP MARLINE, TWO-PLY
(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 31 May 1972, after the draft finalized by the Cordages Sectional Committee had been approved by the Textile Division Council.

0.2 This standard was first published in 1961. In this revision opportunity has been availed to amend clauses on methods of test in order to make reference to the relevant Indian Standard on methods of test and delete the fps version of the standard.

0.3 This standard contains clauses **5.1**, **A-1.1** and **A-1.2** which call for agreement between the buyer and the seller.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes requirements for tarred hemp marline.

1.2 This standard does not specify the general appearance, feel, etc, of the marline.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in IS : 3871-1966† shall apply.

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*Rules for rounding off numerical values (*revised*).

†Glossary of terms relating to fibre ropes and cordages.

3. MANUFACTURE

3.1 Hemp Fibre — The fibre used in the manufacture of the marline should be hemp (*Cannabis sativa* or *Crotolaria juncea*), true to its type, unadulterated and free from defects and shorts. It should be well hackled.

3.2 Yarn — The hemp yarn should be evenly spun. The direction of twist in the single yarn shall be 'Z' and that in the plied yarn shall be 'S'.

NOTE — The linear density of the untarred yarn should be approximately 3·6 ktex.

3.3 Marline — The marline shall be made of two yarns twisted together with 'S' twist.

3.4 Skein — Each skein should be continuous throughout its length and should not contain any loose ends.

4. REQUIREMENTS

4.1 The marline shall comply with the requirements of Table 1.

5. PACKING

5.1 The marline shall be made into skeins each weighing approximately 0·5 kg unless otherwise agreed to between the buyer and the seller. Fifty such skeins shall be packed into a bundle.

6. MARKING

6.1 Each bundle shall be marked with the following:

a) Name of the material;
b) Manufacturer's name or trade mark, if any;
c) Weight of the bundle; and
d) Year of manufacture.

6.1.1 The bundles may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

TABLE 1 REQUIREMENTS FOR TARRED HEMP MARLINE

(*Clause* 4.1)

Sl No.	Characteristic	Requirement	Method of Test, Ref to	
			Cl No. in Appendix A	Indian Standard
(1)	(2)	(3)	(4)	(5)
i)	Linear density, ktex, (approx)	12·5	—	—
ii)	Turns per metre, *Min*	47	—	IS : 832-1964*
iii)	Runnage, m/25 kg, *Min*	2 016	A-2	—
iv)	Breaking load (60 cm gauge length), kg, *Min*	45	—	IS : 1670-1970†
v)	Tar content, percent	25 to 30	A-3	—
vi)	Ash content, percent, *Max*	4	—	IS : 199-1957‡
vii)	Water soluble content of extracted yarn, percent, *Max*	3	—	IS : 3456-1966§

*Method for determination of twist in yarn.

†Method for determination of breaking load, elongation at break and tenacity of yarns (*first revision*).

‡Methods for estimation of moisture, total size or finish, ash and fatty matter in grey and finished cotton textile materials (*revised*).

§Method for determination of water soluble matter of textile materials.

APPENDIX A

(*Table* 1)

METHODS OF TEST

A-1. CONDITIONING OF TEST SPECIMENS AND ATMOSPHERIC CONDITIONS FOR TESTING

A-1.1 Conditioning of Test Specimens — Prior to test, the test specimens shall be conditioned to moisture equilibrium in the standard atmosphere at 65 ± 2 percent relative humidity and 27 ± 2°C temperature (*see also* IS : 196-1966*), unless otherwise provided for in an agreement between the buyer and the seller.

A-1.1.1 When the test specimens have been left in such an atmosphere for 48 hours in such a way as to expose, as far as possible, all portions of the specimens to the atmosphere, they shall be deemed to have reached moisture equilibrium.

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*Atmospheric conditions for testing (*revised*).

A-1.2 All tests shall be carried out in the standard atmospheric conditions (*see* **A-1.1**), unless otherwise provided for in an agreement between the buyer and the seller.

A-2. RUNNAGE (LENGTH PER 25 KILOGRAMS)

A-2.1 Cut off from the skein a test specimen of 10 m length measured under a tension of 2 percent of the specified breaking load. Condition the specimen to moisture equilibrium (*see* **A-1.1**) and determine its weight. On the basis of the weight obtained, calculate the length in metres per 25 kg.

A-3. TAR CONTENT

A-3.1 Cut off from the skein a test specimen weighing about 10 g. Condition the test specimen to moisture equilibrium (*see* **A-1.1**) and determine its weight to the nearest 25 mg. Extract the specimen in a Soxhlet apparatus with benzene as solvent for about 1½ hours with a minimum of six siphonings. Evaporate the solvent from the extract until the odour of the solvent disappears. Dry the residue at 100 to 105°C for 1 hour and then condition it to moisture equilibrium. The difference in weight, expressed as percentage of the weight of the unextracted specimen, shall be the tar content of the marline.

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

QUANTITY	UNIT	SYMBOL
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

QUANTITY	UNIT	SYMBOL
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

QUANTITY	UNIT	SYMBOL	DEFINITION
Force	newton	N	1 N = 1 kg.m/s^2
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2

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